

What we claim is:

1. A metal sheet pile comprising:
  - a flange;
  - a pair of webs, each of said pair of webs being connected at one end thereof to opposite ends of said flange, respectively, so as to be line-symmetric with each other;
  - a pair of arms, each of said pair of arms being connected at one end thereof to another end of said pair of webs, respectively; and
  - a pair of joints, each of said pair of joints being connected to another end of said pair of arms, respectively,wherein a cross-sectional dimension of said metal sheet pile meets all of the following inequalities:
  - $700 \leq B \leq 1,200$ ;
  - $280 \leq B_f \leq 0.0005 \times B^2 - 0.05 \times B$ ; and
  - $-0.073 \times B + 0.0043 \times I + 230 \leq H \leq 380$ ,where B is an effective width [mm] of said metal sheet pile, B<sub>f</sub> is a width [mm] of said flange, H is a height [mm] of said metal sheet pile, and I is a geometrical moment of inertia [cm<sup>4</sup>/m] of said metal sheet pile.
2. The metal sheet pile according to claim 1, wherein the cross-sectional dimension of said metal sheet pile further meets the inequality  $B_f \times 0.6 \leq B - B_f - 2 \times B_w \leq B_f \times 1.1$ , where B<sub>w</sub> is a width [mm] of said webs in the direction parallel to said flange.
3. The metal sheet pile according to claim 2, wherein a thickness of the flange is less than 28 mm.
4. The metal sheet pile according to claim 1, wherein said metal sheet pile is made of steel.
5. The metal sheet pile according to claim 1, wherein said pair of arms are parallel to said flange.
6. A metal sheet pile comprising:
  - a flange;
  - a pair of webs, each of said pair of webs being connected at one end thereof to opposite ends of said flange, respectively, so as to be line-symmetric with each other;

a pair of arms, each of said pair of arms being connected at one end thereof to another end of said pair of webs, respectively; and

a pair of joints, each of said pair of joints being connected to another end of said pair of arms, respectively,

wherein the metal sheet pile has a geometrical moment of inertia  $I$  of 9,500-10,500 [cm<sup>4</sup>/m] and a cross-sectional dimension of said metal sheet pile meets all of the following inequalities::

$$890 \leq B \leq 920;$$

$$280 \leq B_f \leq 350; \text{ and}$$

$$210 \leq H \leq 350,$$

where  $B$  is an effective width [mm] of said metal sheet pile,  $B_f$  is a width [mm] of said flange and  $H$  is a height [mm] of said metal sheet pile.

7. The metal sheet pile according to claim 6, wherein the cross-sectional dimension of said metal sheet pile further meets the inequality  $B_f \times 0.6 \leq B - B_f - 2 \times B_w \leq B_f \times 1.1$ , where  $B_w$  is a width [mm] of said webs in the direction parallel to said flange.

8. The metal sheet pile according to claim 7, wherein a thickness of the flange is less than 28 mm.

9. The metal sheet pile according to claim 6, wherein said metal sheet pile is made of steel.

10. The metal sheet pile according to claim 6, wherein said pair of arms parallel to said flange.